

AMENDMENT TO THE CLAIMS

Please **AMEND** claims 1, 3, 5 and 6 as follows.

Please **ADD** claims 16 - 18 as follows.

A copy of all pending claims and a status of the claims is provided below.

1. (currently amended) A commutator motor, comprising:
a stator comprising a stator yoke having a tubular shape and extending in ~~[[its]]~~an axial direction and having an inner peripheral surface, and a field magnet fixed to the inner peripheral surface of the stator yoke for providing a field magnetic pole in the stator; and
an armature rotatably disposed within the stator;
wherein the stator yoke ~~is constituted by~~ comprises at least one of (a) a plurality of plate-like annular bodies having iron parts which are stacked on each other coaxially in the axial direction of the stator yoke, and (b) a plurality of substantially identically configured iron plate-like arcuate bodies disposed at such position as to form a part of virtual annular bodies and which are stacked on each other coaxially in the axial direction of the stator yoke; and
wherein the plurality of plate-like annular bodies or the plate-like arcuate bodies adjacent to each other in the stacked direction are fixedly connected to each other by caulking, and
wherein at least one pair of convex portions protrude radially inwardly from the inner peripheral surface of the stator yoke ~~for retaining~~ holding securely the field magnet between the convex portions.
2. (cancelled)
3. (currently amended) The commutator motor as claimed in claim 1, wherein the plurality of plate-like annular bodies or the plate-like arcuate bodies have an inner peripheral surface defining the inner peripheral surface of the stator yoke, ~~and~~

~~wherein at least one pair of convex portions protrude radially inwardly from the inner peripheral surface of the plurality of plate-like annular bodies or the plate-like arcuate bodies for retaining the field magnet between the convex portions.~~

4. (cancelled)

5. (currently amended) A commutator motor, comprising:

a stator comprising a stator yoke having a tubular shape and extending in ~~its~~an axial direction and having an inner peripheral surface, and a field magnet fixed to the inner peripheral surface of the stator yoke for providing a field magnetic pole in the stator; and

an armature rotatably disposed within the stator;

wherein the stator yoke is ~~constituted by~~comprising at least one of (a) a plurality of plate-like annular bodies having iron parts which are stacked on each other coaxially in the axial direction of the stator yoke, and (b) a plurality of substantially identically configured iron plate-like arcuate bodies disposed at such position as to form a part of virtual annular bodies and which are stacked on each other coaxially in the axial direction of the stator yoke;

wherein the plurality of plate-like annular bodies or the plate-like arcuate bodies adjacent to each other in the stacked direction are fixedly connected to each other by caulking, wherein ~~the~~a non-magnetic portion is defined by a hollow groove extending in the axial direction of the stator yoke and formed in the inner peripheral surface of the stator yoke with a depth of the groove extending partially into the stator yoke, and

wherein the stator yoke has ~~[[a]]~~the non-magnetic portion at a substantially center portion of the field magnetic pole in a radial cross-section of the stator yoke.

6. (Currently amended) A commutator motor, comprising:

a stator comprising a stator yoke having a tubular shape and extending in ~~[[its]]~~an axial direction and having an inner peripheral surface, and a field magnet fixed to the inner peripheral surface of the stator yoke for providing a field magnetic pole in the stator; and

an armature rotatably disposed within the stator;

wherein the stator yoke is constituted by one of (a) a plurality of plate-like annular bodies having iron parts which are stacked on each other coaxially in the axial direction of the stator yoke, and (b) a plurality of substantially identically configured iron plate-like arcuate bodies disposed at such position as to form a part of virtual annular bodies and which are stacked on each other coaxially in the axial direction of the stator yoke;

wherein the plurality of plate-like annular bodies or the plate-like arcuate bodies adjacent to each other in the stacked direction are fixedly connected to each other by caulking,

wherein the stator yoke has a non-magnetic portion at a substantially center portion of the field magnetic pole in a radial cross-section of the stator yoke, and

wherein the stator yoke is constituted by a plurality of substantially identically configured iron plate-like arcuate bodies, and wherein the non-magnetic portion is made from a non-magnetic bar members extending in the axial direction of the stator yoke and held between confronting ends of the arcuate bodies, a combination of two arcuate bodies, and two non-magnetic bar members providing an annular body.

7. (withdrawn) A commutator motor, comprising:

a stator comprising a stator yoke having a tubular shape and extending in its axial direction and having an inner peripheral surface, and a field magnet fixed to the inner peripheral surface of the stator yoke for providing a field magnetic pole in the stator; and

an armature rotatably disposed within the stator;

wherein the stator yoke is constituted by one of (a) a plurality of plate-like annular bodies having iron parts which are stacked on each other coaxially in the axial direction of the stator yoke, and (b) a plurality of substantially identically configured iron plate-like arcuate bodies disposed at such position as to form a part of virtual annular bodies and which are stacked on each other coaxially in the axial direction of the stator yoke;

wherein the plurality of plate-like annular bodies or the plate-like arcuate bodies adjacent to each other in the stacked direction are fixedly connected to each other by caulking, and

wherein the caulking is disposed corresponding to a fixing position to which the field magnet is fixed.

8. (withdrawn) The commutator motor as claimed in claim 7, wherein the caulking has a rotationally symmetric positional relationship about an axial center of the stator yoke.

9. (previously presented) The commutator motor as claimed in claim 1, wherein the at least one pair of convex portions is disposed at positions of end portions of the field magnet and the field magnet is press-inserted between the at least one pair of convex portions so as to be held there between.

10. (previously presented) The commutator motor as claimed in claim 1, wherein the at least one pair of convex portions are linearly arrayed in an axial direction of the stator yoke on an inner peripheral surface thereof.

11. (withdrawn) A commutator motor, comprising:
a stator comprising a stator yoke having a tubular shape and extending in its axial direction and having an inner peripheral surface, and a field magnet fixed to the inner peripheral surface of the stator yoke for providing a field magnetic pole in the stator;
an armature rotatably disposed within the stator; and
grooves formed on an inner peripheral surface of the stator yoke,
wherein the stator yoke is constituted by one of (a) a plurality of plate-like annular bodies having iron parts which are stacked on each other coaxially in the axial direction of the stator yoke, and (b) a plurality of substantially identically configured iron plate-like arcuate bodies disposed at such position as to form a part of virtual annular bodies and which are stacked on each other coaxially in the axial direction of the stator yoke; and
wherein the plurality of plate-like annular bodies or the plate-like arcuate bodies adjacent to each other in the stacked direction are fixedly connected to each other by caulking

12. (previously presented) The commutator motor as claimed in claim 5, wherein the grooves are U-shape, triangular shape or a semi-circular shape.

13. (previously presented) The commutator motor as claimed in claim 5, wherein adhesive is formed in the grooves.

14. (withdrawn) A commutator motor, comprising:
a stator comprising a stator yoke having a tubular shape and extending in its axial direction and having an inner peripheral surface, and a field magnet fixed to the inner peripheral surface of the stator yoke for providing a field magnetic pole in the stator; and
an armature rotatably disposed within the stator;
at least one concave/convex portion disposed at an outer periphery of the stator yoke, a position of the at least one concave/convex portion corresponds to a center of the field magnet, wherein the stator yoke is constituted by one of (a) a plurality of plate-like annular bodies having iron parts which are stacked on each other coaxially in the axial direction of the stator yoke, and (b) a plurality of substantially identically configured iron plate-like arcuate bodies disposed at such position as to form a part of virtual annular bodies and which are stacked on each other coaxially in the axial direction of the stator yoke; and
wherein the plurality of plate-like annular bodies or the plate-like arcuate bodies adjacent to each other in the stacked direction are fixedly connected to each other by caulking.

15. (withdrawn) A commutator motor, comprising:
a stator comprising a stator yoke having a tubular shape and extending in its axial direction and having an inner peripheral surface, and a field magnet fixed to the inner peripheral surface of the stator yoke for providing a field magnetic pole in the stator;
an armature rotatably disposed within the stator;
grooves formed on an inner peripheral surface of the stator yoke; and

at least one concave/convex portion disposed at an outer periphery of the stator yoke, a position of the at least one concave/convex portion corresponds to a center of the field magnet,

wherein the stator yoke is constituted by one of (a) a plurality of plate-like annular bodies having iron parts which are stacked on each other coaxially in the axial direction of the stator yoke, and (b) a plurality of substantially identically configured iron plate-like arcuate bodies disposed at such position as to form a part of virtual annular bodies and which are stacked on each other coaxially in the axial direction of the stator yoke; and

wherein the plurality of plate-like annular bodies or the plate-like arcuate bodies adjacent to each other in the stacked direction are fixedly connected to each other by caulking.

16. (New) The commutator motor of claim 1, wherein the plurality of plate-like annular bodies or the plate-like arcuate bodies each have a concave portion and are fixedly connected to each other by caulking the concave portion and mating to a convex portion of an adjacent one of the plurality of plate-like annular bodies or the plate-like arcuate bodies.

17. (New) The commutator motor of claim 5, wherein the plurality of plate-like annular bodies or the plate-like arcuate bodies each have a concave portion and are fixedly connected to each other by caulking the concave portion and mating to a convex portion of an adjacent one of the plurality of plate-like annular bodies or the plate-like arcuate bodies.

18. (New) The commutator motor of claim 1, wherein the at least one pair of convex portions is permanently formed in a circumferential direction of the stator yoke for holding the field magnet therebetween.